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April 22, 1994
RP:0158

Ms. Rae M. Loui
Commission on Water Resource Management
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Ms. Loui:

Stream Channel Alteration Permit
Hanaimoa Gulch, Hauula, Oahu

This document addresses the construction of a permanent culvert, to replace a temporary one, across Hanaimoa Gulch Stream in Hauula, Oahu.

The Environmental Center has reviewed the permit application with the assistance of Dave Penn, Geography; and Chris Welch, Environmental Center.

Comments

In recognition of the need to protect stream channels from alteration for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial uses, the Hawaii State Legislature established a permit requirement under HRS 174C-(3) (A)-(D). Implementing procedures for this statute were subsequently set forth in Hawaii Administrative Rules (HAR) Chapter 13-169, Subchapter 5, Stream Channel Alteration Permit. Among the various items that are to be included in each permit application (according to HAR 13-169-51), we note the requirement [(13-169-51 (b)(4)] for "An assessment of the impact the channel alteration will have on the stream environment". We bring this to your attention because it has appeared to our reviewers that the present permit application for stream channel alteration for Hanaimoa Gulch Stream is quite deficient in information regarding the potential impacts of the proposed channel alteration on the stream environment. Specifically, there appears to be little to no information as to the original "environmental" conditions of this stream; the

existing conditions with the current temporary culvert; and finally, an assessment of the potential impacts of the proposed new concrete culvert. We note that an Environmental Assessment (EA) and Conservation District Use Application (CDUA) are pending and many of our concerns are likely to be addressed in the development of these documents. In order to minimize duplication of effort and information, we suggest that the EA that is pending be incorporated into this permit by specific reference. This should eliminate the need for duplication of the assessment of the impacts in the permit as required by HAR 13-169-51 (b)(4).

As presently drafted, the application does not specify any historical data for the Hanaimoa stream. We note that the stream flow is cited as "intermittent" and the hydrologic calculations estimate a peak run-off flow rate of some 210 cfs. based on a 50 year recurrence interval. There is no indication of the frequency or intensity of any recorded discharges or of the ability of the temporary culvert to carry the flows. Nor is there any information as to the characteristics of the stream prior to the current temporary culvert. The permit application should include this information or it should be included in the EA and made a part of the permit by incorporation.

The description of the area does not indicate if a stream biota is present. Depending on the nature of the stream bed, for example the presence of pools of permanent water that provide an aquatic environment in between periods of low or zero flows, there may or may not be a "typical" stream biota. If a stream biota exists then more information should be provided about that biota. If the stream flow is so intermittent as to occur only a few times per year, with no permanent standing water, then the need for in depth assessment of impacts to potential stream biota may be unnecessary. If a stream biota is present, then examination of the riparian resources should not be confined to the area of the culvert alone but should extend to some rational distance on either side of the area to be disturbed in accordance with recommendations given in the Hawaii Stream Assessment of 1990.

There is no information in the application as to the sediment loads carried by this stream under high (or low) flow conditions or possible impacts of these flows downstream of the culvert. Since the Hanaimoa Gulch Stream culvert will include use of heavy equipment in the process of removing the old culvert and replacing it with the new one, precautions should be taken to minimize sediment loads to the stream channel. Current management methodologies exist for the abatement of erosion and sedimentation in conjunction with projects of this nature. In order to adequately assess the proficiency of such methodologies a plan

showing the control procedures should be included with the permit (or in an accompanying EA). The permit should specify the use of Best Management Practices in the containment of sedimentation.

In any assessment process the main criteria for making accurate and timely decisions is that all the information essential to the decision making process is present. For stream channel alterations, the essential information is necessarily the computations and projections of post project stream flow. One of the crucial topics in stream impact assessment is if and how the stream will affect embankments by its changed flow characteristics. The application did not include the necessary information to estimate post-project conditions. For example, what design method was instituted to address potential increased velocities downstream as a result of the new culvert? The culvert design does not appear to include any detention or baffling features that would mitigate potential increases in flow velocity and duration that would result from the proposed culvert.

The use of the Rational Method for hydrological calculations is somewhat outdated and the results are questionable. Better methodologies exist for calculating runoff and include the Soil Conservation Service Runoff Curve. This table incorporates both the type of cover on land and the soil characteristics. Such runoff curve tables exist for some areas in the State of Hawaii. Perhaps until the County's requirement for use of the Rational Method is changed, both methods could be incorporated to avoid possible errors introduced by using the Rational Method alone.

The permit application states that the Board of Water Supply (BWS) is attempting to obtain an easement from the Department of Land and Natural Resources (DLNR) for the access road (of which the culvert is a part). It is our understanding that the DLNR right of way is on property owned by the Native Hawaiian Land Trust. Should the permit address the issue of compensation for the easement by the BWS to the Native Hawaiian Land Trust?

In conclusion, many if not all of the issues and questions we have raised are likely to be addressed in the pending EA. It would seem most efficient and cost effective to incorporate the EA into the Stream Channel Alteration Permit process through specific citation.

Thank you for the opportunity to comment on this Stream Channel Alteration Permit.

Sincerely,

Jacquelin N. Miller
Associate Environmental Coordinator

cc: OEQC
Roger Fujioka
Dave Penn
Chris Welch